PROGRESS REPORT ON PESTICIDE PROBLEMS

The report entitled "A Review of Pesticide Monitoring Programs in California" dated February 1971 gives a comprehensive view of the causes of the high levels of pesticides in the marine environment. For example, it shows that the emission of total chlorinated hydrocarbons from Los Angeles County Sanitation Districts (LACSD) has, in the past, exceeded the total of all other known discharges by a wide margin. During the period of December 1969 through May 1970 it was reliably estimated that more than 500 lbs. DDT per day were discharged from LACSD. By comparison, all of the agriculture in the San Joaquin and Sacramento Valleys combined contributed less than 10 lbs. per day to the Bay-Delta system.

Testimony at the pesticide hearings in February 1971 showed that all of the problems of DDT in the marine environment are located in Southern California. Before the LACSD problem became known, articles written by such authorities as Dr. Robert Risebrough of the University of California stated that it was curious that the problems were all in the south and none were found even inside San Francisco Bay, let alone outside the Golden Gate. The Department of Fish and Game testified that fish caught within sight of the Golden Gate were found to have low concentrations of DDT, and that although high concentrations were found in fish from Santa Monica Bay, none have been found in fish north of Point Conception.

There is no way that any appreciable amount of water-borne pesticides can find their way to the ocean from agricultural uses to the ocean in Southern California since no streams flow to the ocean except in rare flood stages. These flood stages have been analyzed and found to contain low concentrations of DDT. Thus, it has become clear that:

1. The problems of DDT in the marine environment are limited to Southern California.

2. Southern California's problem is almost entirely related to LACSD effluent.

It is reasonable to assume that the high concentrations in LACSD wastewater have existed for a number of years. Within the past 18 months, those concentrations have been reduced to about 20% of their former levels. But more than 100 lbs. DDT per day still appear to be arriving at the LACSD plant. LACSD has cooperated wholeheartedly with the State and Regional Boards, as well as the Department of Agriculture, to eliminate the source of the problem. Steps that have been taken are:

1. The LACSD pesticide division now consists of five employees and is equipped with two gas-liquid chromatographs. It has been upgrading its analytical capability. In a recent test, the laboratory was able to duplicate its results on split samples to within an error of less than 20%.

2. The discharge to the sewer of DDT-laden industrial waste from Montrose Chemical Company has been stopped completely.

3. Numerous samplings have been made of different locations in the LACSD system to determine what sections are high in DDT concentrations. The sections where increases occur have been delineated.

4. An intensive search has been made for the sources of DDT being discharged to the system, particularly in those sections where increases in concentrations occur.

5. All known retailers of DDT products in Los Angeles have been visited by Department of Agriculture and the products containing DDT have been removed from their shelves.

6. Surveys of sediments in the sewer have been made. Up to 12 inches of sediments have been found in some trunks, containing as much as 39% DDT. (Average concentrations are 1 to 2%.

7. Extensive sewer cleaning has been done by LACSD. Some sections have been cleaned twice, and consideration is being given to a third time. An estimated 8,000 lbs. of DDT have been removed from the sewer by removing several hundred thousand pounds of sediments.

Concentrations have now been reduced to the range of twenty parts per billion. The question has arisen whether some compound other than DDT may be confusing the analyses. In an attempt to eliminate this possibility, and at the same time to enhance the general laboratory capability of laboratories in the State, the State Board has organized an interlaboratory co-analysis of wastewaters for chlorinated hydrocarbon residues and certain heavy metals. The following agencies are cooperating:

1. Environmental Protection Agency
2. Department of Water Resources
3. Department of Public Health
4. Los Angeles County Sanitation Districts
5. Los Angeles Department of Water and Power

Each agency will analyze two duplicate aliquots from seven different samplings. After having studied the results, the participants will be called to conference by the State Board to compile the improvements in technique or procedures that may be indicated.

Trends in concentrations are difficult to discern because of the erratic nature of the concentrations of samples (infra). But it does appear that the cleaning operation, coupled with elution of the remaining sediments, is resulting in a decrease of concentrations of DDT in LACSD plant influent.

Accurate measure of DDT at the 10-30 ppb range is difficult. But recent trials by LACSD indicate that a bigger problem is that of getting a representative sample. For example, LACSD sampled 10 stations on August 5-6, 1971. To check sampling and analysis accuracy, two 24-hour composite samples were taken at each station and triplicate analyses were made of each sample. Mean values calculated for the two samples per station show a variation from 2 to 240%. Six of the 10 stations showed a sampling variation of 100% or more. In other words, two 24-hour composites, at one sampling point, composed of grab samples taken within 5 minutes of each other, produced results that were quite different. The three duplicate aliquots, on the other hand, showed a variation of only about 20%. These difficulties cast grave doubts on a control agency's ability to properly sample such discharges as sewer lines for DDT.

SWRCB
10/22/71